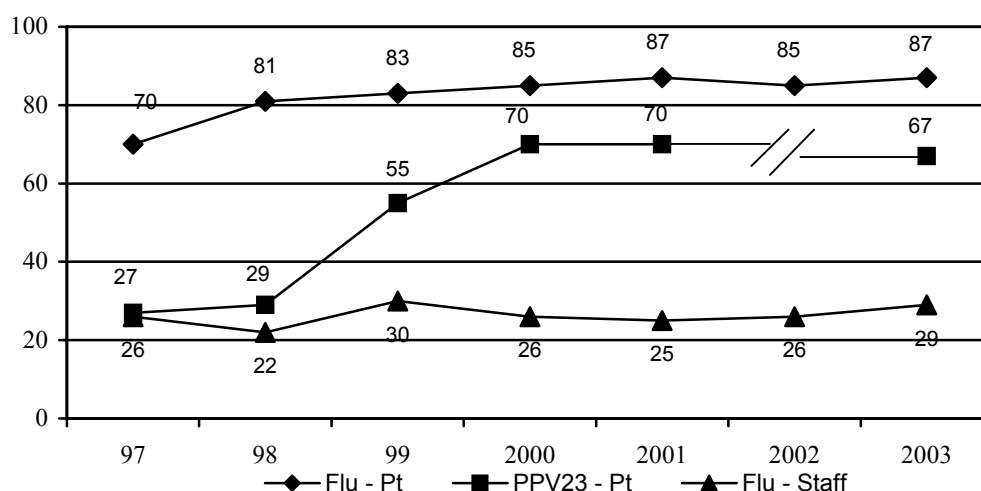


MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH  
IMMUNIZATION PROGRAM

## Control of Influenza and Pneumococcal Disease in Long-Term Care Facilities 2004 - 2005

The Massachusetts Department of Public Health (MDPH) encourages long-term care (LTC) facilities to protect residents and staff against influenza and pneumococcal disease. Influenza and pneumococcal disease are major causes of morbidity and mortality, particularly among persons  $\geq 65$  years of age and other people with underlying medical conditions. Vaccination is the most effective tool available for preventing pneumonia in LTC facilities. Vaccination rates in LTC facilities, however, have leveled off over the last few years and many LTC residents and staff in Massachusetts remain unimmunized.

**Vaccination Rates in Long Term Care Facilities**  
**Results of the Annual Massachusetts Division of Medical Assistance**  
**Survey of Long-Term Care Facilities**



*Streptococcus pneumoniae*, the organism that causes pneumococcal disease, is the most common cause of nursing home-acquired pneumonia. The case fatality rate is 5-7% and may be much higher in elderly persons. Pneumonia is the primary reason LTC residents require hospitalization. Increasing antimicrobial resistance complicates treatment of pneumococcal disease. Pneumococcal polysaccharide vaccine (PPV23) protects against pneumococcal meningitis and bacteremic pneumococcal pneumonia, a common complication of influenza.

During the 2003-2004 influenza season, the MDPH Immunization Program investigated 45 outbreaks of influenza-like illness (ILI) in LTC facilities, compared with 11 outbreaks during the previous influenza season.

**Protect yourself, your family, and your patients.**  
**All health care providers should receive flu vaccine every year.**

## IMMUNIZATION OF EMPLOYEES

Studies have shown that 25% of all health care workers are infected with influenza every flu season. Influenza vaccination of all staff in LTC facilities reduces mortality of elderly patients. Influenza is often introduced into and spread throughout a facility by either staff or family members of residents. Influenza vaccine may be less effective in the very elderly and, although immunized, some LTC residents may remain susceptible to influenza. It is therefore important to reduce their exposure to the disease. Influenza vaccination of health care workers in nursing homes significantly reduces the impact of influenza among residents, as well as reducing absenteeism due to illness. All staff, including housekeeping and dietary staff, consultants and volunteers in LTC facilities should receive flu vaccine every year. Currently, only 29% of LTC employees in Massachusetts receive annual influenza vaccination.

**NEW!** For a web-based CME course, *Importance of Vaccinating Health Care Workers Against Influenza*, visit

<http://idinchildren.com/monograph/CMEframeset.asp?article=0402/splash.asp&mono=y>.

For strategies to improve influenza vaccination rates among health care workers in your facility go to <http://www.nfid.org/publications/hcwmonograph.pdf>.

To obtain an Employee Immunization Toolkit, call MassPRO at 781-419-2749, or visit the Massachusetts Medical Society website at [www.massmed.org/pages/flu\\_kit.asp](http://www.massmed.org/pages/flu_kit.asp).

## IMMUNIZATION OF FAMILY MEMBERS AND VISITORS

Family members of residents and other visitors should be informed about their role in the transmission of influenza to patients and they should be encouraged to receive influenza vaccine. To find out where to get their flu shots, family members can call their health care provider or local board of health, or visit the MassPRO web site at <http://flu.masspro.org> for a list of public flu vaccination clinics by city and town.

## AVAILABILITY OF STATE-SUPPLIED INFLUENZA VACCINE

Long-term care facilities are a top priority for receipt of state-supplied influenza vaccine. MDPH expects to provide sufficient state-supplied inactivated flu vaccine **for all residents** of long-term care facilities in October 2004. If there is state-supplied flu vaccine available after all residents have been vaccinated, state-supplied vaccine can be used to vaccinate employees.

**Flu vaccine for employees** may be available for purchase from the manufacturers below. Additional sources for vaccine can be found at [www.hidanetwork.com/govtrelations/flulinks.asp](http://www.hidanetwork.com/govtrelations/flulinks.asp), a service of the Health Industry Distributors Association.

Aventis		
Pasteur	800-822-2463	Inactivated influenza vaccine (for everyone $\geq$ 6 months of age)
		Inactivated influenza vaccine (only for people $\geq$ 4 years of age)
Chiron	800-244-7668	
MedImmune	877-358-6478	FluMist (only for healthy people 5 - 49 years of age)

## **Live Attenuated Influenza Vaccine (LAIV)**

FluMist™, an intranasally-administered, trivalent LAIV, is licensed to prevent illness from influenza A and B in healthy persons aged 5- 49 years.

LAIV should not be given to anyone at increased risk for influenza-related complications (see enclosed *Prioritization for Use of Influenza Vaccine* for list persons at risk for complications from influenza) or anyone with a history of Guillain-Barré syndrome. Use inactivated vaccine for these people.

**NEW!**

Health care workers not caring for severely immunocompromised patients can receive either LAIV or the inactivated vaccine. Inactivated vaccine is preferred for vaccinating household members, health care workers and others who have close contact with severely immunocompromised persons during periods when such patients require care in a protected environment. Health care workers receiving LAIV should refrain from contact with severely immunocompromised patients for 7 days after receipt of the vaccine.

Severely immunocompromised persons should not administer LAIV. However, other persons at risk, including those with mild immunodeficiency, pregnant women and persons  $\geq 50$  years of age, may administer LAIV.

## **INFLUENZA VACCINE USE IN MASSACHUSETTS LONG TERM CARE FACILITIES**

For the 2003-04 flu season, MDPH distributed 58,970 doses of state-supplied flu vaccine to LTC facilities; 3,541 (6%) of these doses were reported as lost or wasted, or were returned unused to MDPH. Lost, wasted and unused doses of state-supplied influenza vaccine at LTC facilities cost approximately \$25,000. In order to reduce the amount of wasted and unused vaccine, LTC facilities should return unused vaccine to the MDPH Regional Offices as soon as possible for redistribution.

## **PNEUMOCOCCAL AND Td VACCINE**

Pneumococcal (PPV23) and tetanus/diphtheria (Td) vaccinations are also important for LTC residents. Fewer than 50% of people  $\geq 20$  years of age in the United States are protected against both tetanus and diphtheria because they are not up to date with their Td. More than 50% of all tetanus cases in the United States are in people  $\geq 60$  years of age, and one fourth of these are associated with chronic wounds, such as decubiti.

**NEW!**

MDPH is again providing PPV23 for all Massachusetts residents, including adults, who are at risk for pneumococcal disease.

MDPH provides Td and PPV23 vaccines at NO COST to all providers. To order state-supplied PPV23 or Td, contact your local vaccine distributor or the MDPH Regional Office (see enclosed list).

## **IMMUNIZATION POLICY**

A systematic approach to vaccination, with checklists, can increase immunization levels by 30-40 percentage points. Facilities should review their immunization policies every year. Annual influenza vaccination for all residents and staff and PPV23 and Td vaccination should be part of the written immunization policy.

***Consider residents with uncertain immunization histories NOT immunized and vaccinate accordingly. The benefits of vaccination far outweigh any concerns about revaccination.***

Written immunization policies for long-term care facilities should include the following:

- 1. Vaccination as a Standard Part of Admission** – Integrating vaccination into the admission process addresses vaccination for every resident in a routine, systematic manner.
- 2. Vaccine Information Statements (VIS) and Consent** – VIS's for pneumococcal, Td and influenza vaccines should be part of the admission packet. Consent for vaccination should be obtained from the resident or a family member at the time of admission. VIS's in English and other languages are available online at [www.immunize.org/vis](http://www.immunize.org/vis) and from MDPH.
- 3. Standing Orders** - Standing orders should be in effect for all residents for administration of the 3 vaccines listed below. Standing orders are the most effective institution-based strategy for improving vaccination rates. Model standing orders are available from MDPH for the following vaccines:
  - a. Influenza vaccine** should be given to all residents and all staff every influenza season. Residents should be vaccinated in October. Residents admitted from October through March should be vaccinated on admission.

In New England, flu season usually does not begin until December and peak until February. Influenza vaccine can and should be administered throughout the flu season.
  - b. Pneumococcal polysaccharide vaccine (PPV23)** should be given on admission to all unvaccinated residents  $\geq 2$  years of age. Previously vaccinated residents who are  $\geq 65$  years of age should receive a second dose of PPV23 if:
    - a) it has been more than 5 years since their first dose; and
    - b) they were younger than 65 years of age when they received the first dose.Local reactions at the injection site are reported following both first vaccination and revaccination with PPV23. These reactions are self-limiting and are not a contraindication to vaccination.
  - c. Td vaccine** should be given on admission to all residents who are without immunization records, and to those for whom it has been  $\geq 10$  years since their last dose.
- 4. Simultaneous Administration** – Influenza, PPV23 and Td vaccines are safe and effective when administered simultaneously in separate syringes at different anatomical sites.
- 5. Quality Assurance** - Chart audits should include an immunization component to ensure that there is documentation in every chart that the resident has been offered pneumococcal and Td vaccines, and annual influenza vaccine.

### **Surveillance for Influenza at Your Facility**

Facilities should establish a surveillance system to identify any increased incidence of influenza-like illness (ILI) among patients. ILI is defined as a fever  $\geq 100^{\circ}\text{F}$  with cough or sore throat in the absence of a known cause. Other symptoms may include myalgia, headache, or weakness. A sample Influenza-Like Illness Line (ILI) Listing has been attached for systematic collection of data in the event of ILI among patients or staff.

It is important to collect information about the location (wing, floor, unit, room), group

activities, immunization history, predisposing factors, dates of onset, symptoms, fever, complications (including pneumonia, hospitalization and death), pertinent diagnostic tests (including cultures, rapid tests, other laboratory tests and x-rays), and any antibiotics/antiviral agents administered. These data will be important in the development and targeting of your outbreak control strategy.

Any sudden increase in absenteeism or illness among staff also warrants an investigation. Ill employees should be reminded to notify their employee health service if they are experiencing febrile respiratory symptoms and refrain from direct patient care. When outbreaks of ILI occur, facilities are required to notify their local board of health, the Division of Health Care Quality at 800-462-5540 ext. 8150 (Accident/Incident line) and the Immunization Program at 617-983-6800.

## **Influenza Outbreak Control and Prevention of Pneumococcal Complications**

In addition to influenza surveillance, diagnostic testing for influenza can aid clinical judgement and guide treatment decisions. The accuracy of clinical diagnosis of influenza based on symptoms alone is limited because symptoms from illness caused by other pathogens (e.g. *M. pneumoniae*, parainfluenza viruses, and respiratory syncytial virus [RSV]) can overlap considerably with influenza. Diagnostic tests for influenza and RSV performed at the State Laboratory Institute (SLI) include viral culture and rapid antigen testing.

### **1. Specimen Collection:**

**Influenza, para-influenza, enterovirus, adenovirus, RSV:** Recovery of virus differs between throat and nasopharyngeal (NP) swab collection. It is recommended that NP swabs be used for all specimen collections as testing for multiple agents (flu, para-flu, enterovirus, adenovirus and RSV) can be performed with NP swabs. ***Please indicate on the Specimen Submission Form all the agents you wish to test for. The lab will not test for agents that are not listed.*** For convenience both throat and NP swabs are included in each kit. Throat swabs cannot be used to test for RSV.

**Influenza virus isolation:** Flu kits for specimen collection can be ordered by calling MDPH at 617-983-6800. These kits include full instructions and throat and NP swabs. The kits should be kept frozen until used.

Swab specimens for NP or throat cultures should be obtained  $\leq 48$  hours after symptom onset. No special technique other than that normally used for cultures is required to obtain a suitable specimen for an influenza culture. If you are using an NP swab please see the RSV section for collection and instructions. In the event of an outbreak, specimens should be obtained from 3 - 4 patients with the most recent onset of symptoms. Collect and mail culture specimens, with a completed *Specimen Submission Form* (included), to the State Laboratory Institute (SLI) Virus Isolation Laboratory. For flu only specimens, mail as soon as possible, preferably on a Monday, Tuesday, or Wednesday. If a culture specimen is to be shipped on a Thursday or a Friday, call an MDPH Immunization epidemiologist at 617-983-6800 to arrange for specimen submission via courier.

**Rapid detection:** Rapid detection is helpful for making decisions about the use of antiviral agents. Upon receipt of a swab specimen, the SLI routinely uses a rapid viral culture technique. If influenza A or B is present, a presumptive diagnosis may be available within 24-48 hours. The SLI will notify the submitting facility if a presumptive positive diagnosis is made. A confirmatory diagnosis, using traditional culture methods, will follow the presumptive diagnosis.

and should be available 4 - 12 days after receipt of the clinical specimens.

**Rapid antigen testing:** Rapid antigen testing is also available at some commercial laboratories and in some provider offices. These rapid tests differ in the types of influenza virus they can detect and whether or not they can distinguish between types A and B. Due to the lower sensitivity (i.e. false negatives) of the rapid tests, clinicians should consider confirming negative tests with viral culture or other means. Despite the availability of rapid antigen testing, the collection of clinical specimens for viral culture is critical, because only culture isolates can provide specific information on circulating influenza subtypes and strains. Package inserts and the laboratory performing the test should be consulted for more detail. Additional information on diagnostic testing is available at [http://www.cdc.gov/ncidod/diseases/flu/flu\\_dx\\_table.htm](http://www.cdc.gov/ncidod/diseases/flu/flu_dx_table.htm).

**Respiratory Syncytial Virus (RSV) isolation:** Nasopharyngeal (NP) swab specimens should only be collected at the acute onset of illness within the previous 48 hours. Fever does not have to be present at the time of specimen collection. NP swabs (included in the kit) should be bent in to a gentle curve and inserted into the anterior nares and the posterior nasopharynx gently swabbed. Complete instructions for obtaining and transporting specimens are included in the kits. In the event of an outbreak, specimens should be obtained from 3 - 4 patients with the most recent onset of symptoms. Collect culture specimens and complete a Specimen Submission Form found in the kit and include with the specimen. RSV specimens must be returned to SLI the same day they are taken. Please contact the MDPH Immunization epidemiologist to arrange for specimen submission at 617-983-6800.

## 2. Vaccination During an Outbreak

It is important to have a system in place to be able to readily identify unvaccinated residents and staff. Review the immunization status of patients and staff and immunize all unvaccinated residents and staff with influenza vaccine as soon as possible. Because pneumococcal disease is the most common complication of influenza, take this opportunity to immunize residents with pneumococcal (PPV23) vaccine as well.

## 3. Antiviral Agents

Antiviral drugs should not be used as a substitute for vaccination. Antiviral drugs, however, can be used as an adjunct to immunization for prophylaxis and control of influenza. Amantadine **and** rimantadine **can be used for both the** prophylaxis and treatment of influenza A only. Zanamivir is approved only for treatment, not prophylaxis, of influenza A and B. Oseltamivir is approved for treatment and prophylaxis of influenza A and B.

When antiviral agents are used for outbreak control, they should be administered to all residents (include all employees if variant strain is found that is not well matched to vaccine) regardless of immunization status. The drugs should be continued for 2 weeks after all residents and staff have been vaccinated or until one week after the end of the outbreak. The antiviral dose for each resident should be determined based on age, renal function, liver function and other pertinent characteristics. If there is a variant strain or unusual circumstances occurring during a season MDPH will issue appropriate bulletins and advisories.

Pre-approved medication orders, or plans to obtain physician's orders on short notice, should be in place to ensure that chemoprophylaxis can be started as soon as possible.

For additional guidance on the use of antiviral medications, refer to the package inserts and

Prevention and Control of Influenza - Recommendations of the ACIP (CDC. MMWR 2004; 53). See below for information on obtaining this and other documents.

#### **4. Confine and Cohort Patients & Limit Floating of Staff**

Keep symptomatic patients in their rooms and restricted from group activities until symptoms have resolved. Cohort the affected unit and minimize staff floating. In an outbreak situation, postpone facility-wide activities until the outbreak has ended. Consider limiting visitors and restricting new admissions. Discourage people with influenza-like symptoms from visiting. Keep staff with influenza-like symptoms from direct patient contact whenever possible.

#### **5. Hand washing!**

Reinforce the significance of direct contact as a source of transmission and the important role of hand washing in limiting transmission of disease with staff, visitors and patients. For more information and materials to promote handwashing, go to: [www.mass.gov/dph](http://www.mass.gov/dph).

#### **6. Notification**

- Providers must report all outbreaks to their local board of health and the Division of Health Care Quality at 800-462-5540, ext. 8150 (Accident/Incident line).
- Providers and local boards of health should also report outbreaks to the MDPH at 617-983-6800 or 888-658-2850.
- Advise all visitors and employees of influenza activity in the facility.
- When transfers occur, notify the receiving facility of the influenza activity.

#### **ADDITIONAL INFORMATION**

CDC. Prevention and control of influenza: recommendations of the ACIP. MMWR 2004;53(No. RR-6) . <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5306a1.htm>.

CDC. Prevention of pneumococcal disease: recommendations of the ACIP. MMWR 1997;46(No. RR-8). <http://www.cdc.gov/mmwr/preview/mmwrhtml/00047135.htm>

#### **Vaccine Information Statements (VIS) in English and other languages:**

[www.immunize.org/vis](http://www.immunize.org/vis).

Other documents relating to influenza and pneumococcal vaccine and outbreak control include:

- *Prioritization For Use of Influenza Vaccine – 2004*
- *Adult Immunization Guidelines*
- *New Recommendations for Influenza Vaccine*
- *Pneumococcal Vaccine: CDC Answers Your Questions*
- *Influenza Vaccine Policy Checklist*
- *Myths and Facts About the Flu Vaccine*
- Model standing orders for administration of influenza, Td and pneumococcal vaccines.

These documents are available online on the MDPH website [www.mass.gov/dph](http://www.mass.gov/dph). Hard copies of these documents and additional information and assistance are available from your MDPH Regional Office or from the Immunization Program at 617-983-6800 or 888-658-2850.